

THE  
MASSACHUSETTS TEACHER.

NOVEMBER, 1858.

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Volume XI. SAMUEL J. PIKE, Editor for this month. Number 11.

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FAITH.

AT one of our county associations, many months ago, the question was raised for discussion, "*How far should reasons be assigned to pupils for requirements made of them?*" Without participating in the debate, the writer brought away — he is sorry to confess — the impression that careless, superficial, and trivial marks betrayed in some of the speakers poor appreciation of a most vital topic. The persuasion that this very principle of arbitrary imposition of rule, or reasonable winning of obedience, enters and determines our whole system of discipline, establishing precisely the difference between despotism and education, has led to this article. Behind this same persuasion he shelters from attack his gallantry (on which he inexpressibly dotes), if he subject to some criticism an essay presented on the occasion by a female teacher; criticism tempered and softened, of course, by the grateful remembrance of a double allusion to himself as the advocate of extreme and dangerous doctrines. In the palmy days of chivalry, the knight-errant owed allegiance to but one lady, whose loveliness and honor he defended in every place and at all times against each assault, and at any hazard; while from this loyalty and love no menace of hostile spears could daunt him, nor wooing of softer arms seduce. In our work, nobler than tilt or tourney of palmer or paladin, we have no mistress but truth; bearing on our shield no emblazonment but of her escutcheon, we lift, even against beauty and wit, our lance for service to her imperial, supreme enthronement.

Let our readers be shocked by no fear of the dogmatical treatment our title threatens. The essay spoken of was mainly theological in its tenor, forcing and fastening its point by the somewhat complacent reiteration of a single verse of scripture, "Children, obey your parents ; for this is right." Our accomplished friend had read some antique manuscript of Paul's letter to Ephesus, which did not recognize the purity of the controverted clause, "in the Lord ;" but when the glorious Apostle wrote to the church at Colosse, he said, "For this is well pleasing to the Lord," which has the same significance. Now we deferentially submit that this obedience to parents, cited as absolute, is exactly the reverse. Is not a reason offered for the requirement, and in the spirit of all righteous law does not obligation cease on failure of the condition? The parental and filial relation is to wide extent open to the understanding of little children ; its necessity, its potency, its terms, are partially within their capacity of estimate ; and so our sovereign master enforces his command by this imperative appeal. The fifth of the Decalogue is especially sanctioned as "the first commandment of *promise*." The illustration spoils the logic. The child is not tamely to obey when the earthly father contravenes the sway of the heavenly ; and to determine this agreement or hostility he has no help but of his reason and his conscience. Our fair essayist would hardly quote in its largest range the accompanying clause, "In all things." Futhermore, in the context the apostle adds, in both epistles, "Provoke not your children to wrath." But, as some regulations must be placed about them not wholly acceptable to impulsive tempers, how is the father to avoid kindling their wrath ? Certainly in no better way than by calmly, yet authoritatively, showing them the benefit of the proposed method, its tendency, bearing, and result ; and if they fail, in the light of his clearer judgment, to discern its propriety, he must then exact an unwilling subjection. We have space simply for suggestion, not enlargement, upon this ; and there is slight occasion for exhibiting its analogy to school-keeping. We protest, however, against making even this analogy too close or complete.

We maintain the final authority of all school-codes to be, "For this is right ;" but we also contend that the bare edict of a master

does not and should not push the pupil to implicit acceptance of their immaculate justice. Sudden emergencies there must be, compelling positive command ; junctures there will be when children cannot be made reasonably to apprehend the issues of a proposed law : with such cases we have at present no concern. Our theory is for the basis of general, not exceptional, practice.

Against another line of argument followed in the essay and discussion we make graver objection, because it is so often pursued, and has so fair, yet so fallacious semblance of directness. It is this : our life is full of mystery ; the Divine Government is to us shadowy and inexplicable, so that we grope timidly through the darkness, stumbling and bruising ourselves on our perilous pathway, finding light and warmth and joy only when, through tears from the depth of sorrow, we look upward and remember God is merciful.

“ Behold, we know not anything ;  
I can but trust that good shall fall  
At last — far off — at last, to all,  
And every winter change to spring.

So runs my dream ; but what am I ?  
An infant crying in the night ;  
An infant crying for the light ;  
And with no language but a cry.”

The spirit of the reasoning is that we are to establish our discipline upon the divine pattern, and to such spirit we render due reverence. Let us remember that no frailty, no perverseness, no arrogant self-will, can unclasp from about us the everlasting arms, and that in our vainest wanderings we are followed still by the sweet invitations of infinite pity and eternal love. Dwelling in dust, crushed before the moth, we are led tenderly and constantly by the hand that marshals Arcturus and Orion, while it pilots the home-going bee, and floats on the waves of summer air their freight of thistle-down, or the invisible thread of the spider. Let us despise no mean capacity, let us scorn no laborious effort, let us despair of no corrupt nature ; but let us beware how we grasp at the power beyond our attainment. Be the child never so weak, or stupid, or obstinate, there is between him and us a similarity of which the Creator and creature can never partake. Some-

time, by growth and careful culture, he may stand above us ; and our boasted wisdom may become to him folly and presumption, our foresight worse than innocent blindness. Life is a probation such as school cannot be. God is omniscient, immutable ; from his government we shall never escape, and the principles of its administration must endure through ages reaching no close ; of his temple we have as yet entered but the vestibule, but there and within the lofty service is one and unchangeable. The intercourse of the teacher and the scholar is limited and transient. It makes no demand of mystery, it has no business with deliberate concealment. Faith is measured by infallibility. Personal, immediate responsibility is the gauge of the pupil's duty, and only by adjusting our requirements to that can we challenge obedience. Imputation and predestination may be terms accurately defined and admirably understood in theology, but we prefer not to borrow them just now for our profession. In our daily walks we are girt round by impenetrable obscurity ; but this is no reason why we should hang between ourselves and our feebler fellow-travellers flimsy and deceitful veils. Because ineffable wisdom condescends not to impart to our comprehension the plenitude of its purposes, must we seek to dignify by self-constituted providence our fleeting projects of an hour ? We reiterate the assertion,— we are dealing only with generalities. We neither advocate nor allow the propriety of a scholar's refusing obedience until he discusses the expediency of the rule. The estimate of the exigency is ours, not his ; and at times, in spite of our fervent sympathy, we must demand of him simple faith. But, in most instances, he will see as clearly as we that we are driven by necessity into the strait, and will feel, therefore, less reluctance to yield. Is not this the dilemma ? Our regulations are either reasonable or the reverse. Now, if they are just and profitable, will they provoke compliance any the less cordial because their character and efficiency are fully understood ? And, if they are unreasonable, dare we enforce them purely upon the suffering ignorance of their subjects ?

Let us look at a single illustration of this mystery of Providence, and consider how far any of us would presume to copy it in matters of our management. We know a schoolmaster who



boasts of instructing three lineal generations, and speaks pleasantly of some of his scholars as his great-grandchildren. He enters his school-room some beautiful summer morning, when breeze and bird and blossom — we all recall such blessed mornings — invite him to hearty recognition of sovereign goodness, and determines to imitate, so far as possible, the divine administration. On one of the front seats he finds a new-comer, a bashful, curling-haired, blue-eyed girl, by whose timid answers he discovers a grandchild of a troublesome stripling of his early tuition. Now his course is established. He calls in tones of wrath for the trembling stranger to stand upon the platform ; with the heaviest of his ferules he flays her white hands and smites her unoffending forehead, so that she bears away wounds to leave ineffaceable scars ; day by day he exposes her to the jeers of her ruthless companions, he forces her into classes where she is utterly friendless, imposes upon her tasks far beyond her strength, and crowns her failure with the mockery of her more fortunate mates. Wearily, patiently, silently she sustains all this ; nay, she kisses the hand that torments her, and to the foes that hunt her speaks words of timorous benediction. In this school, from which she can escape only by the master's release, she finds no companion, no promise, no hope ; until at last, overburdened with labor, scorn, and despair, in solitude of spirit, she faints and falls in the midst of her desolation, to rise no more. What should be the doom of such a tyrant ?

Go with us one moment down that street of splendid warehouses, in any one of which more money is gained in one month than your best effort can command in a year, and ten rods from that granite-fenced corner we will show you one of the school-rooms of the Heavenly Master. Below the sidewalk, in a dungeon, with no window, in a damp, polluted corner, is a bed, and tossing perpetually upon it a little child. Hour after hour alone she lies, writhing, moaning, casting up her thin, blue arms in remediless agony, calling for a mother who hears not, pitiably praying for succor which comes not ; gradually, surely wasting away, dropping down without physician or soothing balm to the waiting, remorseless grave. A sister, hardly stronger than the sick child, comes languidly in, and as the pallid sufferer, with parched lips,

cries for water, takes the only vessel she can obtain, a rusty, leaking, tin pail, and brings the wretched draught from a neighboring pump. Then, from her long, long day of unrequited toil, the mother comes, hungry, faint, disconsolate, with no food for herself, but thanking God, in sincere faith, that her poor earnings can purchase a scanty anodyne for her babe. An orange, a cooling potion, a half-loaf of coarse bread, is the result of to-day's hard service; and to-morrow—God's care. Who hath sinned, this child or her parents? Peace and hope abode once in that woman's bosom; and, save that God so willed, she knows not why they vanished. The child has seen from her birth no waking hour of painless comfort; her feet have never stepped, her limbs were always impotent and shapeless; that corroding cancer fastened upon her lip ere words were within its power; and between her and the tomb linger now not many days of torturing distress. Yet all this disease is hereditary; this poverty and ruin avenge a father's brutal self-indulgence. Here is no sketch of fancy, but a veritable story of puritanic Boston. Who of us presumes to introduce into our puny discipline life's tremendous mystery, or plead, for our justification, "Visiting the iniquities of the fathers upon the children"?

We are not inclined to disgust our readers with homilies or tragedies, but we demur to any charge of inappropriateness. In one shape or other, this plea of "life's discipline" is continually urged. The dependence of infancy, the waywardness of childhood, the strong impulse of maturer years, are made defences for a severe and inflexible appliance of superior power; while moderate and rational, we venture to add even equitable, dealing is denounced as weak and injurious concession. And even here we look in vain for consistency. Allusion was made in this journal a twelvemonth ago to the trouble arising from the propensity of scholars to separate school-life from their ordinary course of habits, and so to become guilty of behavior to themselves elsewhere intolerable. We fear the fault is not wholly theirs. If so, it is a most interesting psychological problem; and we trust some philosopher above us will vouchsafe its solution. Meantime, we humbly suggest a marked *speciality* (we crave indulgence for the word) in the school-keeping. How many teachers manage their scholars

as they would their children? How many children receive from teachers the treatment fairly expected from their parents?

One lovely evening of a summer long past, we stood at a garden gate, talking with a schoolmaster. His little daughter ran about near us, taking rather a leading part in the conversation, with more reference, to be sure, to the thread of her own meditations than ours. Her father reproved her with "My dear, you must n't," "Hush, my daughter," "You are very troublesome, my child," and threatened to send her to her mother, — from which advisable proceeding we anticipated considerable relief. Infantile volubility and persistency were victorious; and the gossip of the elders was abbreviated, paralyzed, and ultimately killed. This same teacher once had — rather took — occasion to flog a boy for refusing to confess a trick for which, as subsequently proved, he was quite blameless; and, as the youngster turned toward his seat, his final attempt at explanation was answered by a blow felling him to the floor, and thrusting his head beneath the stove. In both these cases was the same childish character to be dealt with, and, however the forms might have differed, the spirit should have been identical; finding on the one side loose indulgence, and on the other repulsive brutality, equally culpable. Yet this master was styled "a *good* disciplinarian," and, though his classes were confessedly slow in progress, he "kept good order." So does a state prison. Is not this the mystery of life, — that the innocent suffer for the guilty, and by self-justification often bring upon their bleeding brows more pitiless insult and torture? So have we read our experience and our Bible. Because our faith should grow firmer under the chastisement of the heavenly, shall we palliate the cruelty of the earthly? That whipped boy knew he was outrageously wronged; and like thousands before him, though with fairer motive, vowed, "when he was big enough," to repay the abuse. A poor business, verily, he made of it getting his lesson of faith!

After all that has been said about moral instruction, we affirm the direct aim of the school-room to be intellectual culture; yet we believe that this alone may become pernicious and destructive. Statistics recorded, and yet to be recorded, amply prove it. The history of business in our large cities, of permanent success — that

is, the success of integrity, honor and manliness, of stalwart, high-hearted citizenship — justifies us in the single inference we would here draw, that the consummate and constant drill of city schools will not alone promise all we must desire. We award to metropolitan schools the just praise of excellence, but we conclude that a narrower course of study in the country finds its complement from other sources. The boy sooner becomes a man; we do not mean a young gentleman — a man of strength and reliability. He may lack the graces of Nahant or the purifying refinement of Newport; but he brings from the hills of home to State street and the Board of Trade, to Court street and the City Hall, material wherefrom some day to make a nobleman. We do not forget the temptations to waste of mind and character which one encounters, and the other escapes; but even this will not strike the balance. It is the alternation of school and work — the desk and the field, or shop, or store, and a definite intent in all; the reality of the business; the steady look to the future and the shrewd measurement of the ways to reach it; the vitality of the whole performance, — that effect the contrast. This inculcation of individual responsibility, the pressure of immediate, but far-aiming duty, the fusion of school and home and varied occupation into unity of life and character, are elements of genuine moral education. This cannot be compassed by words of exhortation, or the mechanical operation of established formulæ. The government of the school, born of and embracing the master's self government, is the chief agency. A selfish, arbitrary, dishonest, indolent, conceited, shallow teacher, never invented a machine for the manufacture of generosity, integrity, meekness, and tenacious fidelity; the rolls of our monstrous Patent Office hold no such record: but, if he unfortunately have the bad qualities, his pupils will not fail to detect them pervading and moulding his movements. His discipline is merely the form in which his disposition and principles reach their action. A system, then, of regulation which hides its motive power and plan of achievement will at once provoke suspicion of its fairness, and be disastrous to confidence in its projector. Scholars may admire his learning and sometimes enjoy his good humor, but they will shrink from his presence because they never entertain that "love which casteth out fear."



This appreciation, for which we plead, of the constitution and purpose of rules, deepens the sense of personal accountability. With it, disobedience becomes a deliberate infraction of essential right; without it, sinks to a heedless disregard of a man's command. No boy of ordinary decency will spurn even a trifling injunction, gently and honestly laid upon him; while, with an obstinate rebel, the surest enginery of subjection is an unyielding demand of his reasons. Take from him all excuse of misconception, and you leave him no answer but a confession of wilful baseness. With him who, after due remonstrance, repeatedly degrades himself to this, we advocate no parley, but punishment administered without passion, and with unmistakeable emphasis.

We are abusing the patience of our readers, if any have followed us, but have said hardly a tithe of what is pertinent to the subject. We speak hastily of one other consideration. The majority of scholars get in the school-room all their education (so called) for active life. If this be anything better than the barren perusal of text-books, then the study of a wholesome government, its structure, method, results; the tracing of cause to effect, through means and instruments; the comparing of benefit with cost, — are lessons not to be despised. The school may become to them a type of the society they are to enter; and they may, they should, watch — not as umpires holding submission in abeyance, but as docile, obedient spectators, repaying trust and sympathy with respect and affection — the order and design honorably given to their inspection. That they are always disposed to this none can deny; whether they do not to some extent succeed is a grave question; whether they in disposition and partial success, or we in attempted prevention, are right, is to our judgment a query of vital moment.

We hold faith to be the sublimest exercise of our nature. By it alone are we exalted from our helplessness into communion with the fulness of the Almighty; by it we climb from our native dust to the dignity of co-workers with Him who "bringeth the princes to nothing and maketh the judges of the earth as vanity." But its functions commence only where Reason can go no further. So long as our judgment avails us, we think and conclude; but when we wander bewildered into the illimitable sweep of God's



decrees, knowing not whither or why we move, we are silent and believe. "Even so" is at once our supplication and thanksgiving. At remote intervals, our school-keeping must fall into analogy to this providential dispensation, and only then may we demand of our pupils corresponding trustfulness.

Speed the time when we remember that we, and those in our tuition, are of one birth and destiny ; when both shall be blended in such divinely appointed harmony, that, while we impart to them of our larger intellectual acquirement, and more symmetrical culture, we may take from them the inestimable gift of humility, frankness, and unsuspecting confidence, until teachers and taught, in the service of dutiful love, become alike little children before the feet of our Father !

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### STEAM FIRE-ENGINES.

ONCE on a time, as all legends begin, the good city of Boston was thrown into a sort of ecstasy by a newfangled machine, brought by its inventor from the West ; and, after several exhibitions of its extraordinary power, that enterprising corporation, with characteristic business energy, purchased it for future use. There could be no question of its utility, no doubt of its efficiency, no problem of its success. The intelligent and incorruptible municipal fathers had with their own eyes gazed upon its marvellous performance, and the matter was established. A house was prepared for its safe keeping ; horses were procured for its locomotion ; competent (as appeared) men provided for its working ; in fact, everything done that a reasonable machine could desire. Its object was to extinguish fires ; and, in the conviction that the unmanageable element had at last encountered its conqueror, owners of stone-fronts slept in security, and directors of insurance companies rubbed their hands in jubilant glee. By and by, at a conflagration, the cumbrous thing was trundled to the scene of action and equipped for service. The fire was magnificent, the Steam-Engine was not ; something seemed to be wrong. There was plenty of steam and considerable racket, but no water ; language more emphatic than commendable was freely used, but

steam-engines have no ears, and fires are insensible to exhortation. After one or two similar experiments and disappointments, the boasted extinguisher retired to private life ; then it was entrusted to eminent machinists for repair and reconstruction. They built locomotives of the first quality, and of course would understand this structure, so much smaller and simpler. We remember, one charming summer afternoon, going out to see the "playing" after Smith and Brown had "fixed over" the Engine. We, in company with a crowd of other respectable citizens, were for an hour and a half amused by the spasmodic attempts of the poor thing to recover its lost credit. But the dirty-faced urchins about us (we don't mean the respectable citizens) shouted, "No you don't, it's no go!" Unfortunately the urchins were correct. The machine again withdrew to obscurity, from which it issued only on grand holidays, to form the finale to stately processions, — an office to which it was, like other public servants, by its imposing size and dignified inefficiency, consummately adapted. A stupendous failure! Now for the sequel. Complaint was made of a cheat to the inventor ; but he, in a reply of which we have yet to hear the reasonableness disputed, said, "You worked my machine with men who were perfectly ignorant of its construction and operation ; they spoiled it by their continued malpractice ; you saw me make it perform, and under their bungling blunders you blamed it, not them ; then, in place of consulting me, you gave it to artisans who make locomotives, *not fire-engines*, and instead of helping the affair their tinkering finished it ; and now, justifying yourselves by a plea of their reputation, you ask of me satisfaction. No, I thank you, gentlemen ; I hold myself absolved." Could anybody gainsay such argument?

But one trial never disheartened the ambitious counsellors of Shawmut. Their justifiable predilection for steam fire-engines waxed stronger. So they proposed munificent prizes to be awarded, on the appointed day, to the machine of the most perfect execution. The day came ; so did the engines, "all marshalled for the fray." Certain regulations were of course established, but by those, observe, whose business was not to make or manage such mechanism. Under these rules, one of the contestants, of whose triumph its friends had sanguine hopes, fell far short of victory,

or even praise. Its inventor pleaded he had not made it to work after that fashion ; it was doing violence to its constitution : give him a chance to work according to his plan, and he would reach the end desired. Even the Persian laws of fire-musters were brought to a compromise, and this ejected machine received the second prize. Now again for a sequel. When it subsequently "played," untrammelled by rigid requirements, and allowed its own method, it displayed such prodigious force as compelled competent judges to hesitate in assigning to its more favored competitor superiority, or even, perhaps, equality. The purpose of all these attempts was, as we have already said, to find some effective instrument for extinguishing fire. This end gained, without undue expenditure of capital, time, or labor, and your design is accomplished. Let us suppose the committee of umpires to be constituted of a clergyman, a doctor, a lawyer, and a retired stoker on a railway, now a policeman. Is the machinist to build and adjust his apparatus in conformity with their ideas of mechanics ? If he construct a "high-pressure," shall they stigmatize him as incompetent because it fails on the "low-pressure" scale which they prefer, and so persist in applying ? If his steam-gauge and water-gauge are to stand at a certain balance, and at that standard the most exquisite beauty of operation marks the perfect enginery, shall the retired stoker maintain that the only proper equilibrium is that which he kept when he fed the furnace on the *Old Colony* or the *Lowell* ? We think not. He is to make a fire-engine that will speedily, thoroughly, economically quench the raging flames, thus bringing security to property, and safety to fearful homes. If he accomplishes this fairly and expeditiously, he is to be judged not by his method, but by his results. Such laws only as provide for the general rights of his employers are to limit him ; in particular form of collocation or equipoise or practice, he is to be left to his own discretion.

So much, rather more than enough, about Engines ; *revenons a nos moutons*, let us sheepishly return to our flocks. Of all complicated machines, we suppose few, for delicate material, intricate arrangement, nice adjustment, harmony of parts, and unity of effect, are to be compared with an orderly school. Its agency is to sharpen intellectual perception, communicate posi-

tive information, and broaden and deepen and ennoble character ; and of these we hold the middle-named to be in itself the most unimportant. To achieve this, unnumbered and infinitely varied instrumentalities are brought to service, — actions of a moment, and principles of all time ; fleeting emergencies, and moral conditions permanent as God's eternal truth ; emotions evanescent as ripples on a lake at morning, and thoughts and sentiments which move in widening circles for ever ; — and all these to be gathered and marshalled and fixed in one simple, supreme result of perfect culture. This is the teacher's duty, not to be fulfilled in one month or three months, or to be fairly estimated in a half-day's examination, but to be patiently, carefully, anxiously sought and followed day by day, and hour by hour. In the speech, the action, the face of his pupil ; in the moral atmosphere of his room ; in his out-door meetings of his scholars ; in their pleasant greeting and their sullen turning away ; in their love or their aversion, — he is to find the threads which his hand is to weave into the final blended texture. And so surely as this fabric of his constant toil be smooth and strong, harmoniously colored or finely wrought, to him is to be adjudged the reward of the faithful and successful workman. They who oversee him have no shadow of claim to go behind his work ; to judge and condemn the method of a single hour or day, ignorant of its connection or intent ; and from casual observation of his peculiarities, rather than a liberal computation of his attainments, to pronounce sentence on his prosperity and fidelity. The labor is too large, and the terms of it too perplexing and appalling, to be complacently handled by a company of men, who, like a coroner's jury, render verdict over a motionless corpse, of whose departed, animating soul they know nothing but its absence. What can they examine on a set occasion, but the general contents of text-books ? How insignificant a portion of the whole accomplishment is this ! And do they know in what way the pupil dealt with his studies ? do they know that to a young mind it is of chief importance that knowledge be elicited mainly on the same plan by which it was acquired ? Because a boy cannot write out the scholium of a subordinate proposition of Euclid, does it follow he is not well drilled in mathematics ? If a girl fails to remember in what



year Luther and Zwingli had their mournful rupture, is she deficient in history? If a child laughs at the pompous nonentity of some obscured questioner, must she be branded as deliberately malicious and rebellious? And, if a whole class are confused and thwarted by the ridiculous ignorance of conceited authority, is such embarrassment a test of their instruction? Is not the machine to be managed in accordance with its plan of structure? else how can it but fail? Does not the teacher *build*, thoughtfully and individually, his school? and must it not compass its end in obedience to his, no other, principles? Illustration: A teacher who believed flogging to be the last, not the first, resort of healthy discipline, and who was acknowledged to have a quiet, respectful, contented school, whose encomium from visitors was "How pleasant your scholars look!" was favored by a member of his committee with the opinion that the rod should be forthwith introduced into the institution of which both pretended to have charge. Somewhat amazed, he reverentially asked the reason. "Because I am confident the insubordination of children cannot be checked without it!" "Insubordination! Why, my dear sir, what have you seen? Any disobedience, impertinence, coarseness? any indecency of deportment toward you, or their teacher, or each other? are they not studious, polite, good-humored?" "Oh! I cannot specify anything; they appear very well so far as I have observed, and I have heard they are much less troublesome than formerly; but there is a spirit of insubordination among them which must be crushed by the rod." "But, my good sir, I do not apprehend what you mean by insubordination. They are docile, gentle, civil, and yet I am to whip them — for what?" "I have told you I cannot specify, but I supposed you knew the definition of the term, 'insubordination.'" "I do not, sir." This was the end of conversation on that point; and this a true report of an actual conference. Now here was your policeman, ex-stoker, regulating the steam-engine; but his career as stoker was a most palpable and ludicrous sham, and as policeman he had provoked the pitying contempt of his long-suffering friends.

Again: A professional gentleman was once examining a large class in chemistry, whom he astonished with the interrogatory, 'What is the per-centage of carbon in the atmosphere?' As



may possibly be inferred, he got no answer. After an astounded silence, the instructor, sitting by, meekly suggested, "Will you ask them the proportion of carbonic acid?" which was answered by the boy at the end of the row. Immediately the question was proposed, "What is the office of plants in continually throwing out carbonic acid into the atmosphere?" In dumb admiration, both pupils and teacher were helpless. This examiner's profession had undoubtedly led him, as it should have done, to the study of chemistry; but those beneath his scrutiny had never been taught in exactly that style.

We have taken our text, and preached our discourse; we leave the "Improvement" mainly to our readers. We believe that gross injustice is perpetrated on the teacher; not always or necessarily through bad intention, but often through self-established incompetency, by a false and lamentably short-sighted judgment of his labor. To an extent unknown in any other pursuit he is placed at the mercy of pretentious, ignorant — pretentious in the ratio of ignorance — supervisors, and at their edict must bow or bleed. His claim to be measured, considerably, by his own standard is ignored; and Procrustes, in a thousand modern personages, produces his bedstead, shouting to his necessitous victims, "Lie ye hereupon." We plead for no arrogance or arbitrary egotism on the side of schoolmasters. To a certain line they are and should be servants of the community; individual preference, always excepting conscience, should defer to general good; and the only motive to personal effort should be universal and abiding welfare. Here we come round again to an ultimate object, and here we renew our claim for freedom of intermediate method. Give us ever the holy decree, decent, just, and sensible, as it is sacred, "By their fruits ye shall know them."

We forbear. In some future number of this journal, with editorial permission, we propose farther to discuss this or a kindred topic; assuming as a basis of remark that admirable sentiment in our issue for September, —

"There is no other business within the pale of civilization so completely under subjection to outside influences, as that of the public teacher; so dependent on others, oftentimes ignorant of the secret springs."

## QUESTIONS ON THE FIRST SEVEN LINES OF THE ÆNEID.

THE following questions are simply designed to indicate the course of investigation which the student ought to pursue in studying a Latin author. Some of them may seem unimportant or trivial; but nothing which goes to give the fullest knowledge of every sentence read can justly be so regarded. The grammar, the general laws and usages of the language, the rhetoric, logic, poetry, biography, geography, mythology, and history, are all necessary for the fullest comprehension of the author's meaning, and the greatest profit to the student.

Should these questions be thought of any service in pointing out the proper method of study, similar ones may be prepared on a few lines of Greek.

"Arma virumque cano, Trojæ qui primus ab oris  
 Italiam, fato profugus, Laviniaque venit  
 Litora, multum ille et terris jactatus et alto  
 Vi superum, sævæ memorem Junonis ob iram,  
 Multa quoque et bello passus, dum conderet urbem,  
 Inferretque deos Latio, genus unde Latinum  
 Albanique patres atque altæ mœnia Romæ."

## QUESTIONS.

Why is the poem called the Æneid? When was it written? Object of it? At what time does the scene open? Is the first book the first in the order of time? Why not? Which book is first in the order of time? Second? Third? How is it in the Iliad? Paradise Lost? What may the first seven lines be called? What do they contain? Why do *arma* and *virum* stand the first words in the poem? Different senses of *arma*? Ever used in singular? Is *arma* and *virum* a case of Hendyadis, signifying the warlike achievements of the hero? If not, what is meant by each? Is the first the warlike achievements, and the second the personal adventures? What is the construction of these accusatives? Are they the objects of *cano* in any such sense as when we say, *I sing a song*? or are they a kind of cognate accusative — *I sing the story of the arms and the hero*? Why *cano*, i.e., in what sense does he sing? Peculiarity of *cano* in second root? How many Latin verbs have reduplication? *Trojæ*, where? Difference between it and Ilium? In what country situated? Near what sea? Is the site now known?

What word determines two features of *qui*? What are they? What two features of what word does *qui* determine? What are they? What is the postive of *primus*? When do you use *prior*, and when *primus*? Why is the *i* in *primus* long? Was Æneas the first who came from the coasts of Troy to Italy? Did not Antenor come before (see line 242 seq.)? How are these statements to be reconciled? Would *primum* have the same meaning as *primus* here? What would be the difference? When *a* and when *ab* used? Does *ab* show the relation between *oris* and *profugus*, or between *oris* and *venit*, or both? Difference between *oris* and *litora*? What is the greatest number of syllables in a hexameter line? The least? How disposed of in each case? What is the predominant foot in hexameter verse? Why not all dactyls? By what principle is the first *i* in *Italiam*, which is naturally short, long here? Why is *Italiam* in the accusative? Is this the usual construction? What is the usual construction in a good prose writer? Had the peninsula, known in later classical times as *Italia*, in earlier times any name which designated the whole? To what different portions was the term *Italia* applied at different periods? How early did the name embrace the whole peninsula? Derivation of *fato*? Why ablative? Why used at all? Without it would it be clear, at this point, whether Æneas was a mere adventurer, or an exile on account of his misdeeds, or by the appointment of the gods? Derivation of *profugus*? Is it to be taken in a good or bad sense, *i.e.*, as a fugitive or an exile? What feeling for the hero is the word adapted to produce? Where was Lavinium? What modern place occupies its site? What relation does *Lavinia litora* bear to *Italiam*? Could the *Lavinia litora* change place with *Italiam*, so as to stand before it? Why not? If Lavinium was not upon the sea coast, how can the poet say *Lavinia litora*? Is the *que* appended to *Lavinia* a connective, "and," or an expletive, "even"? Were there any *Lavinia litora* when Æneas came there? If not, by what figure does he call them so? What figure in the scanning of *Laviniaque*? Does the form of *venit* determine whether it is in the present or perfect? If not, how can its tense be determined? Can it be determined in prose except by the connection? As *litora* is neither the name of a town or a country, by what principle is it in the accusative? What is the root of *litora*? What the nominative? Why the change? Does *ille* here have a pure pronominal relation, or is it merely ornate, rhetorical, or emphatic, giving a more lively expression? What is the force of *et* before *terris*? Could it be omitted without essentially changing the expression? If it is equivalent to our "both," what is the force of "both" in similar English sentences? To what is this *et* correlative, or to what does it correspond? Why is *terris* in the plural here? Why in the ablative? In good prose, is the preposition more commonly expressed or omitted with such ablatives? What kind of a verb does *jactatus* come from? What does such a verb imply? What is the simple verb from which this comes? Is *est* to be understood with *jactatus* and *passus*, or are these pure participles merely? Is *alto* strictly an adjective or a substantive? Any English word similarly used? What is the primary meaning of *altus*, from which it has the signification of both *high* and *deep*? What is the root of *vi*? The origin of the *v*? Is *vis* actually defective in any case? What

case is used very rarely? Is *vi* governed by any word? What relation does this ablative express? By what principle does it stand in the ablative? Who are meant by the plural *superum*? Is any one but Juno meant? What relation does *superum* sustain to *vi*? Full form of *superum*? What are the two forms of the superlative of this word? How is the shorter form, *summus*, obtained from the other form? Difference of use or signification of the two forms of the superlative? With reference to what is Juno called *savæ*; or is the epithet applied to her as a general characteristic? *Memorem* properly belongs only to persons; that being the case, how is *iram* to be considered? What is the office of the *e* in the last syllable of *memorem*? What is it called? The office of the *m*, and what called? Who was Juno? What were the grounds of her anger here referred to (see lines 25-28)? What is the root of *Junonis*? Whence comes the *n* in the oblique cases? What is the *i*, and what the *s*? The relations expressed by *vi superum* and *ob iram* respectively, *i.e.*, which is instrument, and which cause? Has *MULTA passus* the same signification as *MULTUM passus* would have? *Quoque* means *moreover* in addition to what? What particle would generally be used in good prose instead of *et* after *quoque*? Is *bello* ablative of *means* or *time*? By what principle two *s*'s in *passus*? What would the form be without assimilation? Does *dum* here signify *until*, or *as long as*? Was the suffering experienced only *while* he was building the city, or did it exist all the while till the city was built? Why does *dum* here take the subjunctive? Peculiarity in the second root of *conderet*? Primary meaning of the compound? Derivation of *urbem*? What connection between the meaning of *orbis* and *urbem*? In what way do the two *r*'s come together in *inferret*? What relation does the second root of the simple verb bear to the first? How is the third root (*latum*) derived from the second? Is *deos* here in its usual sense, or is it equivalent to Penates? What occasion for adverting to the idea implied in *inferret deos* at all? In the view of a Roman, would religion be indispensably connected with the founding of a flourishing city? Is the dative *Latio* the usual construction in such cases? What is more common? What and where was *Latium*? From what is the name probably derived? Were the names of places more frequently derived from the names of the people, or the reverse? To what does *unde* refer, and what is its meaning? If it is translated *from which circumstance*, what is the meaning of this expression? How are the Alban fathers *unde*? and the walls of Rome? Which way was *Alba* from *Lavinium*? Rome from *Alba*? Why called *Alba*? Why *Longa*? Is the actual site of *Alba* known beyond a doubt? In what sense is *patres* used here? Is it that of the founders of *Alba*, or the *nobles*, for the purpose of giving dignity to the place? Composition of *atque*? Difference between the use of *atque* and *ac*? Difference between *atque* and *et* as connectives? Why is *Romæ* called *altæ*? On how many hills was it built? Why built on hills? Derivation of *mænia*? How differing from *muri* and *parietes*? Situation of Rome? On the sea? How far from? On what river? On which bank?



## POLITICAL HISTORY.

HISTORY OF THE ORIGIN, FORMATION, AND ADOPTION OF THE CONSTITUTION OF THE UNITED STATES; *with Notices of its principal Framers.* By George Ticknor Curtis. In two volumes. New York: Harpers.

WHEN the present editor last had charge of this journal, he took occasion to introduce an article, written a quarter of a century since by an eminent statesman and friend of sound learning, on the *Study of our Political Institutions*. He finds no less appropriate, and he is sure to every true instructor no less acceptable, counsel in the following extract from a discourse of one whom the teachers of Massachusetts delight to honor; whose name is always suggestive of enlightened judgment, integrity, and devotion, F. D. HUNTINGTON:—

"I am not referring here to the advantages of a general education. I accord, of course, heartily with all that can be argued in behalf of that. There can be no right citizenship at this day without intellectual activity. But over and beyond this I insist on the importance of a special branch of science,—of a better understanding of the fundamental principles which underlie and animate our political system. Proudly as we boast of our promiscuous cultivation, I believe that we are in great danger of national damage from indifference just at that point. We take too much for granted. We are driven to the ballot-box once a year in gangs, by little knots of self-constituted leaders in caucuses, who mean, by indirect process, to dictate the votes and take the offices. Or else we follow some party champion, who, let him know never so much, is certainly not endowed with a vicarious knowledge that shall atone for our ignorance, and who may possibly, on the very theatre where he has gained his experience and his eloquence, have encountered temptations, too strong to be resisted, to imbibe the duplicity and the trickery of a demagogue.

"I would have every child, therefore, *carefully and conscientiously taught those distinctive ideas which constitute the substance of our Constitution, and which determine the policy of our politics.* He should know wherein his own government differs from other governments. He should be able, on his own information, and not depending on any interested meddler, to tell when there is a departure from the true course, where an abuse begins, and where a peril threatens. And to this end there ought forthwith to be introduced into our common schools a simple, comprehensive manual, adapted to juvenile minds and to the whole country, whereby the needed tuition should be planted at that early period. It is absurd that our pupils should go on, through the whole term of their preparation for life, committing the rules of a grammar, the facts of geography, and the calculations of arithmetic, to the total neglect of the principles of the legislation under which they are to live, of the facts of the country to which they belong, and of the constitution of their liberties. It



may be the low instinct of a money-making age to desire only a knowledge how to reckon profit and loss. But will it not be at least as sensible, and far more patriotic, to covet an acquaintance with those grand laws of social order and protection under which all our traffic is prosecuted, by which all our prosperity is shielded, and which alone can make any successful or honorable enterprise possible?

"Among us, a neglect of this sort of culture is without excuse. It is made so equally by the freedom of opportunity, *guaranteed by all the arrangements of our educational apparatus*, and by the simplicity of the government itself which is to be studied."

Unfortunately this extract (of which the italics are our own) contains suggestions nearly as much needed now as they were thirty years ago. We suppose a sensible man can hardly be found to question their truthfulness and imperative claim upon our consideration and practice; and yet that they have not been more heedfully pondered and put into actual practice is indicative of obstacle or defect somewhere.

The safest place, under ordinary circumstances, to lay the blame, would be upon the shoulders of the scholars, because they are broad, and accustomed to the imposition of such burdens. Whenever a recitation drags heavily, or any branch of study is barren, or general listlessness prevails, the teacher must be exonerated, because it is his office merely to hear the lesson after it is prepared; if it is dull or dark or dreary, so much the worse for the learner! Beside, we all know history of general events is proverbially stupid, — pupils hate it, learn it reluctantly, and forget it habitually; so how can we venture to persuade them to the pursuit of abstruse political history and science? This would be good pleading, if it only had a savor of truth about it. Curiosity, of pardonable and unpardonable persistence, is a child's dominant characteristic; not the material, but the method of your book, and, worse, of yourself, is at fault in historical teaching. Put a soul into your galvanized body of narrative, by your inspiration, your voice, your countenance, and to-morrow you will find the springing imagination of your pupil has vitalized the whole in a fashion beyond your best contrivance. History is, as you make it, repulsive or attractive; and, therefore, the guilt of neglect lies not upon juvenile consciences.

The statute of the Commonwealth requires of certain teachers

competence to instruct "in the civil polity of this Commonwealth and the United States." We believe just interpretation of law presumes requirement and intention to be commensurate ; and the legalized attainment of the master establishes the range of the school. Few supervisors would positively object to such education ; although we once failed to obtain permission of the chairman of a large committee to form a "constitutional" class. Sheltering our imperilled head, however, behind the broad Ægis of patriotic loyalty, we hazarded the experiment, and came out in safety, and to the advantage of our pupils. An incident connected with this class, which was wholly of young ladies, illustrates what has been said concerning the interest of scholars in the study. A lad of some fifteen years fell under reproof one day for imperfect lessons ; upon being asked if he had properly occupied his time, he replied, "No, sir ; for you called me forward for playing, and then that class in *politics* recited, and I never can study when you are hearing them. I like to listen so !" The excuse was poor, but the truth was worth remembering.

The responsibility for this neglect is mainly with teachers themselves. As a class, they assume little share in political excitements ; and the popular creed is that schoolmasters, like clergymen, should vote in quiet, and never express, if they dare entertain, a positive political opinion. When corruption festers in high places ; when the masses are herded and driven like beasts to the shambles ; when the bludgeon of the desperado, and the torch and sword of the assassin, get official protection and patronage ; when the cry of hunted women fills the air, lurid with the flame of ravaged homes ; when some great gust of universal wrath sweeps all hearts to a common tumult, — then perhaps we may whisper our indignant protest ; ministers may cry, like prophets of old, from the pulpit, but we may not safely invade the twice-guarded sanctities of the school-room ! No man, that is a man, can teach the principles of our Constitution without some exhibition of his own political preferences ; so he cannot instruct in Moral Philosophy without indicating his fundamental theological tenets. The danger is equal in the two instances. General history involves the same sad necessity.

Who can lead a class through the account of Washington's administration, without stigmatizing that bitter and merciless persecution which beset, with all its hounds, his glorious pathway? Who can portray the causes and issues of our last wars, without encountering parties? No American has a right to be without his view of politics; no American schoolmaster should be debarred from a moderate, conscientious expression of his doctrines.

Supposing, however, this objection, to be regarded, as it ought to be, as below argument, are the majority of our teachers competent, within the meaning of the statute, to instruct in this science? The Constitution of the United States is a body of compromises and adjustments. Conflicting purposes and advantages and influences — since then how sorely aggravated — were even then finding antagonistic position. Wisdom, patriotism, and godliness, discovered themselves often at complete loss whither to turn in search of security and abiding justice. Our organic law is the final expression of this harmonized and far-working contest. Words of reconciliation can be measured and appreciated only so far as we understand the character and aim of the antecedent battles. This most wonderful and triumphant charter of governmental enterprise that the world has seen must be to him ignorant of its history a sealed document of hieroglyphics. Day by day, we see its spirit wronged and tormented by hirelings who boast of adherence to its letter; banners are emblazoned with its words of honor only to become the standards of legions marching to its sepulchre of shame: yet its inmost life can be caught only from the lives and sentiments and deeds of its venerated authors.

So far as we are informed, the invaluable treatise named at the head of this paper is the only one in which this essential knowledge is directly accessible. With Mr. Curtis this has been a labor of love, and so, of course, of fidelity; occupying the leisure of many years otherwise devoted to a kindred profession. We might exhaust our vocabulary of praise by styling it a model of historic composition. Its style is perspicuous, simple, elegant, holding that middle line between barrenness and florid luxuriance which always attracts and never disappoints. Its temper is

frank, dispassionate, genial; its judgment candid, fearless, decisive; its authority carefully established and reliable. But to us its chief value consists in the treasure of information, the accuracy of which is fortified sufficiently, not offensively, by citation of sources; no minute circumstance bearing on the main direction and termination of the work seems to have escaped the writer's search, nor to have deceived him by its apparent insignificance. Beginning with the first Continental Congress, the history reaches to the inauguration of the Constitution under the administration of Washington; and these are its legitimate and only boundaries. We have sketches, that may be called portraits, of the leading members of the Convention, which are as clearly defined and lifelike as any we remember, all of them worthy to be placed beside Bancroft's splendid picture of Washington. These representations are enhanced in merit by the later appearance of an elaborate memoir of Jefferson, of which the author continually merges the biographer and historian in the partizan and special pleader.\*

Here, then, we have precisely such volumes as the instructor needs, — put, too, in such form and upon such terms that every instructor can obtain them. Good, hearty reading will speedily put an earnest teacher in possession of a fund of knowledge from which to impart easily to his pupils enough to make their eyes sparkle and their hearts leap in admiration of their forefathers; in gratitude for the magnificent bequest of this Constitution; and, better than all, in firm resolution to keep it and transmit it unimpaired, unpolluted, imperishable.

To all teachers, therefore, we cordially commend this book; further, we would have it find place upon the shelves of the reference library, however small, of every school which has

\* The query of a friend at our elbow, in connection with this sentence, enforces what we have said in another paragraph. Few of us can have escaped all exhibition of the satisfied ignorance of many of Jefferson's zealous worshippers in maintaining that "he wrote the Constitution." Though he was absent from the country at the time of its adoption, and resolutely opposed to many of its propositions, his biographer is continually led into assaults upon the real authors of this document, and sometimes into aspersions upon their historians. It illustrates the indissoluble unity between civil and strictly political science, and the consequent imperious necessity of investigating each in order to understand and elucidate the other.



advanced enough to procure this indispensable instrument of profit and success. Webster's dictionary is a fine affair, Worcester's dictionary is a fine affair (we wish to be impartial and non-committal); a biographical encyclopædia is highly desirable; a manual of chemical experiments is always welcome: but we would have children know of Washington, Hamilton, Morris, King, Pinckney, Randolph, rather than Caligula, Nero, George II., or Brigham Young. Trial by jury is more valuable than the deutoxide of hydrogen; and the delirious joy of laughing gas is infinitely meaner than the manly and faithful contentment born of a constant and intelligent devotion to an unspotted, liberal, righteous government.

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### THE GOOD SCHOOLMASTER.

HIS genius inclines him with delight to his profession. God, of his goodness, hath fitted several men for several callings, that the necessity of church and state, in all conditions, may be provided for. And thus God mouldeth some for a schoolmaster's life, undertaking it with desire and delight, and discharging it with dexterity and happy success.

He studieth his scholars' natures as carefully as they their books, and ranks their dispositions into several forms. And, though it may seem difficult for him in a great school to descend to all particulars, yet experienced schoolmasters may quickly make a grammar of boys' natures.

He is able, diligent, and methodical in his teaching; not leading them rather in a circle than forwards. He minces his precepts for children to swallow, hanging clogs on the nimbleness of his own soul, that his scholars may go along with him.

He is moderate in inflicting deserved correction. Many a schoolmaster better answereth the name *paidotribes* than *paidagogos*, rather tearing his scholars' flesh with whipping, than giving them good education. No wonder if his scholars hate the muses, being presented unto them in the shapes of fiends and furies. — *Thomas Fuller, 1640.*



# Resident Editor's Department.

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## STATE TEACHERS' ASSOCIATION.

WE wish to call special attention to the following notice, and to urge upon our readers the importance of attending our annual convention at Worcester. As this meeting promises to be of more than usual attraction, and there is but one gathering of the kind during the year, we sincerely hope that all teachers of the State will feel a becoming interest in their profession, and assist by their presence and by their labors. The citizens of Worcester kindly offer their hospitalities and exertions to render this occasion an agreeable one. Shall we not see every member of the Association present?

### NOTICE.

THE Fourteenth Annual Meeting of the MASSACHUSETTS TEACHERS' ASSOCIATION will be held in Worcester, at the City Hall, on Monday and Tuesday, November 22d and 23d.

The Exercises will be as follows:—

#### MONDAY, November 22d.

At 2 o'clock, P. M., the meeting will be organized for the transaction of business, after which his Honor, Mayor Davis, will welcome the Association to the city, and the President of the Association will deliver his annual address.

At 3 1-2 o'clock, P. M., a Discussion. Subject: The Expediency of abolishing the District System, in order to place the entire control of the schools in each town in the hands of its school committee.

At 7 1-2 o'clock, P. M., an address by His Excellency, Gov. Banks.

#### TUESDAY, November 23d.

At 9 o'clock, A. M., a Discussion. Subject: To what extent, and in what way, should Oral Instruction be given in the several grades of Schools?

At 2 o'clock, P. M., a Discussion. Subject: How many hours a day ought children in Primary Schools to be confined to their studies?

At 3 1-2 o'clock, P. M., a Lecture by F. A. Sawyer, Esq., of the Brimmer School, Boston.

At 7 1-2 P. M., a Lecture by Jonathan Kimball, Esq., Principal of the Dorchester High School.

Ladies are earnestly solicited to present brief Essays upon the subjects assigned for discussion, and gentlemen are urgently requested to prepare themselves for the debates.

The citizens of Worcester tender to the ladies who may attend the meeting their generous hospitalities.

Free Return Tickets have already been secured upon the Boston & Worcester Railroad. Arrangements with other railroads will be seasonably announced in the Boston evening papers.

D. B. HAGAR, PRESIDENT.

A. M. GAY, *Recording Secretary*.  
BOSTON, Oct. 25, 1858.

## AMERICAN INSTITUTE OF INSTRUCTION.

*Continued from page 397.*

### WEDNESDAY, P.M. — DECEASE OF PROF. ANDREWS.

D. N. Camp, Esq., Superintendent of the Schools of Conn., rose, and, referring to the death of Prof. Andrews since the last meeting of the Institute, offered the following resolutions: —

*Whereas*, The Almighty dispenser of human events has removed by death a much esteemed member and officer of this Association, Ethan A. Andrews, LL.D., therefore, —

*Resolved*, That in this dispensation we recognize the hand of Him who doeth all things well, and are reminded that the highest scholarship, the most extended usefulness, or the strongest social ties, cannot avert the hand of the destroyer, Death.

*Resolved*, That we sincerely tender to the family of the deceased our sympathy for them in this affliction, which has deprived them of one who had so long been their guide and the object of their affection; and assure them of our prayers, that He who has promised to be the father of the fatherless, and the widow's God and friend, will be near to comfort and sustain them in this hour of trial.

*Resolved*, That the Secretary of this Institute be authorized and requested to transmit to the widow and children of the deceased a copy of these resolutions.

Remarks were made by Prof. Camp and others upon the life and character of the deceased, after which the resolutions were unanimously adopted.

### ADDRESS BY B. W. PUTNAM, ESQ.

At 3 o'clock the Institute was invited to listen to an address by Mr. Putnam, of the Quincy School, Boston.

The subject chosen for presentation by Mr. Putnam was "Drawing as a Branch of Education."

In the first place, some of our prominent national defects were pointed out, and especially the fact of our lack of refinement and taste. Some of the causes of this lack of taste were the newness of our origin, our love of wealth, and the fact that the religious element had been trained to stern, uncompromising justice by our fathers, who forgot that the Almighty made the beautiful, and man with capacity to see, love, and enjoy it.

While we complain that Young America is going too fast, Old America should remember that he has had the training power, and is responsible if our girls are getting their clothes too large, and our boys getting too large for their clothes. If the old man laments the departure of his children from the home of their youth, he must ascribe it to the training which led them to prefer wealth to the cultivation of the heart through the love of the beautiful in nature.

As a remedy for these defects there should be a more complete development of a pure taste in the cultivation of literature, music, sculpture, painting, and drawing. The latter branch should especially be cultivated, for the benefits which would result from a more active exercise that would be required in search of natural objects to be drawn, and especially for the good moral effects which it is fitted to produce. This study will also develop practical talent in training the hand and giving it dexterity; it will cultivate habits of neatness and order, — invaluable habits, and necessary to insure success anywhere.

Drawing strengthens and develops those faculties which are placed above the visual organs, — the perceptive faculties; and upon the accuracy of their development will depend the correctness of our observations. Examples of the effect of the careful training of the faculties by which we make observations, were drawn from the American Indians, the Bedouins of the desert, and the Gaucho Trailer of the Argentine Republic. Blindness is looked upon as a calamity: noble institutions are founded for the comfort of the blind, and philanthropists have devoted years to alleviate their distress; but who has ever thought of teaching those, who, having perfect visual organs, have not learned how to use them?

Drawing disciplines the imagination, and enhances the pleasure and profit of reading, by enabling us to paint the scenes described by an author upon our own mind; and therefore the more truly and correctly we see material objects, the more perfect and harmonious will be our ideal.

After referring to the essay by Mr. Pierce, five years since at New Haven, and sustaining the general views of that essay, Mr. P. pleaded for the practice of giving instruction in drawing as a means of moral culture; and in this connection he referred to the practice — required in the Boston schools — of giving moral instruction as a regular exercise on Monday morning from a prescribed text-book. He said he had often wondered why the sage guardians of the rising generation selected that time as the one most appropriate for moral instruction. The only plausible conjectures he had been able to form were, that, in their judgment, either the children became so contaminated during the Sabbath that a moral lesson was necessary to fit them for their secular studies; or, more plausibly, they look upon the teachers as a kind of Leyden jar which had become full from the droppings of the sanctuary, and think that if the discharger be applied to the brazen top on Monday morning a more effectual shock will follow than at any other time during the week. But why have a set time for moral instruction in school? As an indirect auxiliary force in moral culture, drawing might be recommended as of great value.

Drawing leads to the contemplation of objects of purity and beauty; and beauty and virtue are twin sisters. Virtue, truth, love, heaven, are always symbolized by objects of beauty; while crime, vice, sin, and hell are typified by distortion and deformity. The lovers of nature in every form have been — with only exceptions enough to prove the rule — noble and generous souls. If drawing, as a school exercise, commended itself for the reasons before given, — if it would tend directly to remedy some of the most disagreeable national

characteristics,—teachers should give their influence in its behalf; the Normal School should send out classes prepared to teach it, and children should be encouraged to develop their talents in drawing, and thus cultivate a love of the beautiful early in life. Let teachers take a little of the time now devoted to arithmetical calculations, which teach youth —

“To delve for sordid treasures, better hid.”

Let them snatch a moiety of time now devoted to “that horrid tale of perjury and strife, murder and spoil, which men call history.” Let the voices, moods, and tenses of our mother-tongue wait a little, till nature’s voices, moods, and tenses are better understood; and lead them to the green fields, and beside the still waters, where they may learn lessons of truth, purity, and love, which shall fit them to live simpler, purer, godlier lives.

A brief discussion followed the lecture, in the main, however, sustaining its positions and endorsing them. In this discussion, Messrs. Greenleaf, of Bradford, Emerson, of Boston, Greenleaf, of Brooklyn, Boutwell, of Groton, and Wetherell, of Boston, participated; and at its close the Institute adjourned till evening.

#### WEDNESDAY EVENING.

Dr. W. A. Alcott occupied a short time, while the audience was gathering, in explaining some of the methods he would recommend in teaching the alphabet, and the elements of the art of reading.

#### ADDRESS BY PROF. JOHN FOSTER.

The address of the evening was by Prof. John Foster, of Union College. Without announcing any special theme, Prof. Foster commenced his address by calling attention to the two classes of men, to be found among educators as well as everywhere else, who represent the *Conservative* and the *Progressive* spirit in society. The one, like an emigrant voyager, receding from his home, regardless of the objects around him, turns back to the past, where the centuries like a fruitful land lie reposing; and, as in the dim distance the outlines grow fainter and fainter, imagination peoples the region with beauty and grandeur, to which his yearning heart clings with increasing and exclusive love.

The other clings to the present, and, delighted with the creations of an imagination equally active, dips into the future to see the vision of the world that is to be. The one, in the reverent attitude of a scholar, craves instruction from the deep wisdom of the past; the other has little respect for the past. The one would prefer an old cent to a new eagle, and the other a new cent to an old eagle. The command by the one is “Forward, march;” by the other, “As you were.”

These contrary commands of the *Progressive* and *Conservative* afford a beautiful illustration of the system of checks and balances, to be found everywhere throughout the physical and moral world. The full-blooded *Conservative* bestows all his sympathy on a state of repose; on a race of men where father and son think the same throughout, do the same deeds, wear clothes of the same pattern; and, but for some discrepancy in dates, the very same gravestone would serve to record the life and the virtues of each.

On the other hand, the rampant *Progressive* has for his motto, “Motion, motion, motion;” not “Be sure you are right, and then go ahead,” but “Go ahead at all hazards,” even if it be to march up a hill only to march down again. His ruling maxim is, “Whatever is, is wrong;” he thinks that all existing customs and institutions should be forthwith abolished.

The highest good of society seems to require the presence of both these characters. In the absence of the one we should have utter stagnation, and without the other only effervescence and froth. The *Progressive* makes the spindles



lum; the Conservative, like the balance wheel, regulates the motion. It was to be expected that the subject of education would feel the effects of these conflicting elements, as every public and social interest does. The points upon which existing systems of education have been assailed are three.

It has objected that all classes of mind, under the present system, are subjected to the same course of training; that the taste of the pupil is not consulted; that his genius is cramped; that he is compelled to spend day and night in digging up Greek roots, when he should be abroad conversing with Nature herself; that he must con over the words of Demosthenes and Cicero, while he should himself be conning thoughts that breathe and words that burn,—thoughts that any one but the author would decide should breathe but once, and words that any judicious critic would say ought to burn.

Why do we spend thousands of dollars to secure a knowledge of the geology of a State? One reason is that tens of thousands may not be spent in digging for coal or other minerals where none can be found. It is of equal importance that the mind should be carefully surveyed; that all its wealth, as well as all its poverty, may be revealed to the mind of him who is its observer. We do not regard education enough as the test of the ability of the people. If any educational principle is settled, it is that particular studies are adapted to develop particular faculties. Such was the opinion of Bacon, who says,—“History makes men wise; poetry, witty; mathematics, deep; moral philosophy, grave; logic and rhetoric, able to contend.” The question is, Shall one or two mental faculties receive exclusive attention at the expense of all the rest? In the finished scholar you find no one faculty improved so as to tower above the rest. It is not the highest office of a judicious training to restrict its favors to any one faculty; to elevate one to an absolute throne before which all the others must cower and cringe, and live only in the sunshine of the royal smile: but its office is rather to place them all in the position of the secretaries of our government; each discharging the duties of his own department, and each prepared, when called upon to do so, to occupy with dignity the Presidential chair.

The second objection to the present system of education is that too much time is spent in the study of the mathematics and the ancient languages. But, if these are blotted out, we exclude more than half that the wisdom of ages has regarded as constituting a liberal education. Prof. Foster, in meeting the objection to the study of the mathematics and the ancient languages, made an elaborate and able vindication of the system of education that requires a thorough training in those branches. The value of the study of the *languages* was particularly dwelt upon, and the advantages to be derived from it were clearly set forth. No other process can be compared with it in its ability to impart facility, precision, and nice taste in the use of the English language.

In reply to the question whether the place of the ancient languages could not be supplied by translations of them, Prof. F. said these were no substitutes in that important respect,—the effort of mind that the originals require, and the improvement that they give,—any more than a plaster cast is a substitute for a real person, or an indifferent report of an address is a substitute for the words of an eloquent orator. With a knowledge of Latin, the labor of acquiring the French, Spanish, and Italian is already half accomplished, for of all these the Latin is the mother; and, in the language of the old proverb, “he who is on good standing with the mother may think his prospects daughterwards encouraging.”

The languages called “dead” were never so much alive as now.

The third objection to the present system is that it does not furnish a sufficiently direct preparation for the actual duties of life. There are few standards less uniform than those which are given as to what is necessary for the actual duties of life. The modern idea seems to be that the boy must have all his early studies arranged with reference to the profession he is to follow. On the supposition that he is to be a doctor, he must have his mathematical problems like this—so many bones in the head, so many in the limbs, so many in the body, how many bones in all? In geography, he would not need to know any-

thing except of the countries whence the most powerful mineral and vegetable medicines are obtained. Thus, the young M. D. might be prepared to enter on his profession with a cranium harboring not a single idea except those pertaining to his profession.

Such a system would produce men of one, and that a very small, idea, — such men as are found in an English manufactory, who, though taught in all the mysteries of pointing a pin, know nothing of heading. No system could be worse to fit men to act well their part in life on the American soil.

In conclusion, Prof. F. said that he who undertakes to construct a system which shall bear upon and determine the future educational state and intellectual power of after generations assumes no trifling responsibility. Yet, here as elsewhere, those who are least qualified are most flippant and dogmatical. Let the men of the present day see that they do not furnish an exemplification of the saying that "fools rush in where angels fear to tread."

#### THURSDAY.—THIRD DAY.

The Institute met this morning at nine o'clock, and was opened with singing by the choir, and prayer by Rev. Mr. Ames, of Norwich town.

The minutes of yesterday's proceedings were read, and then the Institute proceeded to the election of its officers for the ensuing year.

#### NEW OFFICERS.

The committee to collect and count the ballots for officers, consisting of Messrs. Henry, of New Bedford, Grosvenor, of Dorchester, and Cruikshank, of Albany, reported the following as the result:—

*President.*—John D. Philbrick, Boston.

*Vice Presidents.*—Samuel Pettis, Roxbury; Barnas Sears, Providence, R. I.; Gideon F. Thayer, Boston; Benjamin Greenleaf, Bradford; Daniel Kimball, Needham; Wm. Russell, Lancaster; Henry Barnard, Hartford, Conn.; Wm. H. Wells, Chicago, Ill.; Dyer H. Sanborn, Hopkinton, N. H.; Alfred Greenleaf, Brooklyn, N. Y.; Wm. D. Swan, Boston; Charles Northend, New Britain, Ct.; Samuel G. Greene, Providence, R. I.; Ariel Parish, Springfield; Lander Wetherell and George B. Emerson, Boston; Daniel Leach and Amos Perry, Providence, R. I.; Nathan Hedges, Newark, N. J.; Wm. J. Adams, Boston; Worthington Hooker, New Haven, Conn.; Zalmon Richards, Washington, D. C.; John W. Bulkley, Brooklyn, N. Y.; Thomas Sherwin, Boston; D. B. Hagar, Jamaica Plain; Jacob Batchelder, Salem; Elbridge Smith, Norwich, Conn.; George S. Boutwell, Groton; John Kingsbury, Providence, R. I.; George Allen, Jr., Boston; Charles Hammond, Groton; D. N. Camp, New Britain, Conn.; R. S. Rust, Xenia, Ohio; Marshall Conant, Bridgewater.

*Recording Secretary.*—B. W. Putnam, Boston, Mass.

*Corresponding Secretaries.*—A. M. Gay, Charlestown; John Kneeland, Roxbury.

*Treasurer.*—Wm. D. Ticknor, Boston.

*Curators.*—Nathan Metcalf, Boston; Samuel Swan, Boston; J. E. Horr, Brookline.

*Censors.*—Joshua Bates, Boston; F. A. Sawyer, Boston; Alpheus Crosby, Salem.

*Counsellors.*—Daniel Mansfield, Cambridge; A. A. Gamwell, Providence, R. I.; Charles Hutchins, Boston; Samuel J. Pike, Somerville; J. W. Allen, Norwich, Conn.; A. P. Stone, Plymouth; George N. Bigelow, Framingham; Richard Edwards, St. Louis, Mo.; Zuinglius Grover, Chicago, Ill.; T. W. Valentine, Brooklyn, N. Y.; J. W. Dickinson, Westfield; J. E. Littlefield, Bangor, Me.

#### DISCUSSION. FRIDAY MORNING.

The question taken up for discussion this morning was, — "Ought Public Schools to be entirely supported by General Taxation?"

Mr. D. N. Camp commenced the discussion, by stating that in all the States of the Union \$40,000,000 were held as funds for the support of education. If by the question it is intended that these funds shall be diverted from their original purpose, and for the purpose of making the whole expense of the public schools rest upon a tax upon property or polls, he would advocate a different side of the question from that which he would if only the necessary expense over and above the funds was to be raised by taxation. If the latter was the form of the question, he would say yes.

The reasons would be, first, because the public schools are a public benefit. It was unnecessary at this time, in such a place, and before an audience like the present, to speak of the results of education, and of its value to a community, either politically, socially, or in any of its relations. If its value is admitted in its influence upon government, in its making property more secure and valuable, and life more pleasant, then like other public benefits it should rest for its support upon the property of the community.

The time will soon come when communities where wealth is concentrated will understand this fact, — that the very best investment that can be made of that wealth, simply as a matter of policy, is to invest it in all the appliances necessary to secure a complete system of public instruction.

Every child who is born has a right to education; not simply a right to live, to breathe the air of heaven, not a right simply to the support of his physical system, to food and clothing, but he has a right to that which is needed to supply the wants of the soul. When our Creator said, "Let there be light," it was not simply that light should shine from the physical sun over this earth, but that there should be light for the soul; and therefore each child has a mortgage upon every piece of property, on every dollar, on every manufactory, on every department of business, for so much of that property as is necessary to secure to him the advantages of a good education.

He would regard it as unnecessary to advocate this question at all, had he not recently met those who oppose the principle of taxation for the support of public schools. But now, in Connecticut, there is a rapid tendency towards a practical adoption of the affirmative of the question. The increase of those districts which support their schools entirely by taxation has been more than two hundred per cent within the last three years; and there are now questions being agitated which will lead to a further decision in favor of the practice. Where schools are best in any State or district, they are almost universally sustained by a tax on property.

The city of Norwich collects a tax of eight per cent for the support of schools. New Haven, Hartford, and many of the principal villages of the State, are collecting nearly equal taxes. He looked hopefully to the time when such an interest would be taken in the public schools that they would be made as free as the air we breathe to all who wish to enjoy the advantages of education.

Dr. Sears was now invited to occupy the chair.

Mr. Samuel St. John, Jr., of Bridgeport, spoke of what had been done recently in Fairfield county. The standard of free schools had been raised, and the teachers of the State could sustain it. *Camp meetings*, he said (alluding to Mr. D. N. Camp as the superintendent of schools), would be held all over the State; and the reform needed in Connecticut would surely be accomplished.

Dr. W. A. Alcott expressed his opinion that Connecticut was advancing, and he believed many of the public schools were better than any private ones in their neighborhood.

Mr. Greenleaf, of Bradford, did not see but one side to the question. Those schools where they have large funds to support them, and no taxation, are composed of a set of miserable, idle, indolent, ignorant boys and girls.

Mr. St. John. That's true, sir.

Mr. Greenleaf. It is with schools as with religious societies: where they have a large fund, and do not pay for the religious instruction, they go fishing

Sundays; where they have to make an effort to support the gospel, they think it worth attention. So with schools; those who pay large taxes will be careful to have their boys and girls in school. In those places where schools are supported by taxation, there are better scholars, and more young men who get well and thoroughly educated, than there are in those places where the schools are sustained by a fund.

Mr. Greenleaf then spoke of what has been done in Massachusetts, and particularly through the Normal Schools. Some people were trying to kill them, and he had given them a recipe for doing it, which is, to get up some private schools better than they are. They will have "to get up early in the morning" to do it. He hoped to see free schools extended through the world. Nothing could be expected from ignorance and vice.

Hon. John A. Rockwell, of Norwich, thought the question was one scarcely disputed by any in that section of the State or part of the country. But he could not agree with all the remarks of the last gentleman. He did not believe funds derived from private contributions an evil; but, on the contrary, a very good thing.

*Mr. Greenleaf.* I would not have a fund that would supersede the necessity of men putting their hand into the work themselves?

*Mr. Rockwell.* I understood the gentleman, and I was going to meet that view. I have no doubt whatever that the principle to which he refers—that men will better take care of what they pay for—is a good one, and that the people would be very likely to superintend that which they are called upon to support. But I think this doctrine has been carried too far. It has been common to denounce our admirable fund as being not the best thing that could be employed, but as being positively bad; as having done great harm by preventing people from supporting their own schools. I deny that. I think it was the most munificent and best thing ever done in this country; and, when our people appropriated the money received from western lands to education, they did the noblest thing that had been done to that time. When our towns appropriated the funds received from the general government they did well. In other places it was scattered. In this state one-half was required by law to be added to the school fund, and some towns appropriated the other half to schools.

But the gentleman says schools must not be supported entirely by a fund. Why not? This institution, the Norwich Free Academy, is sustained entirely by a fund—there is no taxation, the fund is raised by voluntary contribution. Is this a bad thing? Has my friend, the governor, have other persons who have given ten thousand dollars each to establish this school, done a bad thing? Will not this school be taken care of? If this is not a bad thing, would it be bad to establish such a school in every large town, and establish a fund to support the school, without calling upon anybody to tax themselves? No, sir. We shall see the effects of it now and in all future time. The children will be seen here, the children of those who do not contribute a dollar will be seen here just as freely as of those who have contributed their thousands; and more so, for it so happens that those who have contributed their thousands have not any here.

The thing has been carried too far. Though I would impose a tax, and have education as free as air, I think we should not begin by denouncing the liberality which establishes institutions of learning.

Besides, my venerable friend to whom I listened yesterday tells us that the Normal Schools of Massachusetts are models, and that those who undertake to rival them will have a serious undertaking on hand. How are they sustained? Is it by a tax upon those who attend? No, sir. Is it by taxing the little community where they happen to be? No, sir. It is done by the State. Now, if done by a State, is it of consequence whether the money comes from the State treasury or from the hands of the commissioner of a State fund? These schools are good, we agree; and then these schools which cannot be surpassed are sustained, substantially, by a fund!



Mr. Smith, of the Free Academy, suggested that the Todd fund and Dwight fund sustained them.

Mr. Rockwell. It is totally indifferent whether sustained by funds given by individuals or by the State.

Dr. Sears. They were started by individual appropriations, but afterwards supported by the State.

Mr. Rockwell. Then, after all, it appears that the best schools in Massachusetts are sustained by a State fund. I should not have spoken at all except we had heard over and over again of the evils of our State fund. I never believed it. I believe our schools have prospered under our system; and I believe the more money we can get from any such source the better. But, if a fund is not enough to make the schools free and sustain them well, I would have a tax to do it.

There are those who think there should be neither funds nor taxation, who say that the parent should see to the education of the child. If I believed as those who oppose the fund do, I could make an argument for that stronger than they give for their views. But I believe funds have been of great value, and I rejoice to learn that they are of so great value in Massachusetts.

Mr. Greenleaf, of Brooklyn, spoke of objections he had heard to free schools, that taxation to support them was tyranny, and that they corrupt the morals.

Gov. Boutwell said he was well aware that this subject had been again and again discussed in all its bearings. He thought the negative of the proposition that public schools should be entirely supported by taxation pretty difficult to sustain. He then defined what he understood by the term "public schools." They are those institutions open to all the children of the people for specific purposes. Public schools must exist by general taxation, or they will not exist at all; because there is no other agency, no other power known among men — neither the liberality of private individuals, neither the munificence of States in the devotion of public lands, nor any other agency which we can command — that will, for all the people, and at all times, and under all circumstances, furnish the means of education to all the children, except the power in the people to levy a tax on all men, and on the property of all men, for the education of the children of the whole people. No man would go further than he to commend the acts of munificence that establish universities, and such institutions as the Norwich Free Academy.

But the difficulty with reference to such institutions is that men are mortal, while the power of States is immortal. When this generation has passed away, through whose liberality this institution has been endowed, who shall take security for the future, that generation after generation shall rise up, not to call these men blessed merely, but to imitate their example through all coming time, so that the children of the poor shall continue to come up and enjoy the benefits enjoyed in this city to-day.

I would be glad to proclaim in the presence of all people, that I know not, in the history of the past, or in the events which are moving before us, any thing more commendable than the example and experience of this city. But, while I utter this from the depths of my soul, I still feel bound to consider every institution in connection with its influence upon the whole people. If you can satisfy me that there are any other towns in Connecticut, and other men, that will come up and do in some humble degree what has been done here, I will say, here is an example to be commended for its good in itself, and for its influence upon others. But, feeling as I do that there are places where the people cannot be moved by these sentiments, where, if you adopt this *as your system*, there will be a desert spot more dreary than those in which the traveller looks in vain for some oasis.

We address ourselves to the wants of those who are unfortunate, not able to take care of themselves, just as it is the duty of the teacher to help those most who most need help, following the example of the mother in aiding the child in proportion to its want of ability to walk, and leaving it to itself as it can go alone.

That is what we should do in connection with public schools. If there is any spot in the world to which the system of public instruction does not apply, then it fails in its universal application. Connecticut has a power in the system of taxation, not for this generation only, but for all coming generations. Establish the principle in a municipality, take from the rich and the poor what is necessary to educate all the people, the next year do the same, and so on year after year, and you have the most important and most useful means for the maintenance of a system of instruction.

Gov. Boutwell defended his views by reference to the practice in his own town, and to the early legislation of Massachusetts. He also discarded the idea that intellectual culture is the parent of vice and crime, as some in Great Britain have maintained. In conclusion, he said: So educate the masses that they will do exactly, and without law, what ought to be done. It is the duty of the rich man to see to it, that, under all circumstances, and in every condition of things, his rights shall be respected; and this can only be where he has provided for the education of the whole people. If there be one son or daughter of the race neglected, then his security fails to that extent. He can secure that only by a system of universal taxation.

Mr. Rockwell rejoined that he did not differ with Mr. Boutwell in the main principle he had advanced. He was decidedly in favor of a system of general taxation. But he did not agree that therefore we should not avail ourselves of every other means in our power, whether by the amount received from those who pay the teacher of their own children, or by the fund given by the State, or provided by individuals. If I understood the distinguished gentleman who has just spoken, said he, I do not agree with him that we should rely entirely upon taxation, I would have it come from every quarter. I have always felt grateful, in the highest degree, to those gentlemen, who have done so fine a thing as to erect this edifice.

In the language of another, applied to another topic, I will say, — "I ask not whence the wind cometh, but whether it cometh." For any thing that promotes the great cause of education my bark is ready.

#### ADDRESS BY PROF. CALTHROP.

After a recess and another song, Prof. Calthrop, of Bridgeport, was introduced as the lecturer.

He took a general survey of man, and of the means for his education, as a being possessed of body, mind, heart, conscience, and soul. These he considered as all mutually dependent; and, in consequence of that connection the body has something to do with the mind, heart, conscience, and soul of man. His performance was a most amusing and satisfactory one, calling forth repeated applause.

At its close, G. F. Thayer, Esq., of Boston, expressed his delight with the discourse, and moved, that, if the funds of the Institute would permit of it, the author be requested to furnish a copy, and that five thousand copies be printed for gratuitous circulation.

Hon. John A. Rockwell suggested that there should be no condition as to the state of the fund. He thought the means would be readily found.

Mr. Batchelder, of Salem, preferred that the number of copies should be put at fifty thousand. There would be no trouble, he thought, in raising the funds by subscription.

Gov. Buckingham coincided in his views with Mr. Rockwell, and Mr. Thayer so modified his motion. Thus modified, it was unanimously adopted, and the announcement was received with hearty applause.

The Institute then adjourned to take a pleasure trip down the river in the afternoon.

[We have thus presented, in this and the two preceding numbers of the Teacher, a synopsis of the literary exercises of the Institute; and, although much

space has been necessarily assigned to this object, we think none of our readers will regret a careful perusal of the discussions and lectures. We are compelled to omit the concluding exercises, which consisted of the customary complimentary resolutions and remarks.]

## Mathematical.

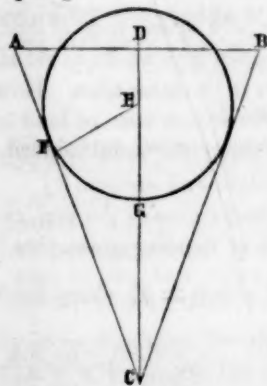
QUESTION 19. Given  $x^2 + y = a$ , and  $y^2 + x = b$ , to find the values of  $x$  and  $y$  by quadratics. E. H.

QUESTION 20. Given  $xy = a$ , and  $(x + y)^{\frac{1}{2}} - (x + y)^{\frac{1}{3}} = x - y$  to find the values of  $x$  and  $y$  by quadratics. E. H.

QUESTION 21. Integrate the expression  $a^3 x^{-\frac{1}{2}} dx \div [a - (h - x)]$ . E. H.

### SOLUTION OF QUESTION 14.

[There is a conical vessel, the altitude of which is  $a$ , and the diameter of the top  $b$ . Required the diameter of a spherical ball that shall expel the greatest possible amount of water, the vessel having previously been filled with that liquid.]



Put  $CD = a$ ,  $AD = \frac{b}{2} = m$ ,  $FE = x$ , and  $AC =$

$$\sqrt{a^2 + \frac{b^2}{4}} = \frac{1}{2} \sqrt{4a^2 + b^2} = n.$$

From the similar triangles  $ADC$  and  $FEC$  we have

$$m : x :: n : \frac{nx}{m} = CE,$$

$$DE = CD - CE = a - \frac{nx}{m};$$

then,  $a + x - \frac{nx}{m} = DG =$  height of segment.

Then  $(6 FE - 2 DG) \times DG^2 \times .5236 =$  a maximum, or  $\left[ 6x - 2 \left( a + x - \frac{nx}{m} \right) \right] \times \left( a + x - \frac{nx}{m} \right)^2 \times .5236 = \text{max.}$

$$\text{or } \left( 2x - a + \frac{nx}{m} \right) \left( a + x - \frac{nx}{m} \right)^2 = \text{max.}$$

By differentiation we have

$$\left( a + x - \frac{nx}{m} \right)^2 \left( 2 + \frac{n}{m} \right) dx + 2 \left( 2x - a + \frac{nx}{m} \right) \left( a + x - \frac{nx}{m} \right) \left( 1 - \frac{n}{m} \right) dx = 0.$$

By dividing by  $dx$ , and by  $a + x - \frac{nx}{m}$  and transposing, we have

$$\left(a + x - \frac{nx}{m}\right) \left(\frac{2m+n}{m}\right) = \left(2x - a + \frac{nx}{m}\right) \times \frac{n-m}{m} \times 2,$$

$$\text{or } \left(\frac{ma + mx - nx}{m}\right) \left(\frac{2m+n}{m}\right) = \frac{2mx - ma + nx}{m} \times \frac{n-m}{m} \times 2.$$

By omitting the denominators, and developing, we have  
 $(2m+n)ma - (2m+n)(n-m)x = [(2m+n)(n-m)x - (n-m)ma] \times 2.$

By transposing, and uniting the terms, we have

$$-3(2m+n)(n-m)x = -2(n-m)ma - (2m+n)ma,$$

$$\text{or, } -3(2m+n)(n-m)x = -3man,$$

$$x = \frac{man}{(2m+n)(n-m)} = \text{radius of ball.}$$

$$2x = \frac{2man}{(2m+n)(n-m)} = \text{diameter of ball.}$$

By substitution,

$$x = \frac{ab\sqrt{4a^2+b^2}}{4\left(b + \frac{1}{2}\sqrt{4a^2+b^2}\right)\left(\frac{1}{2}\sqrt{4a^2+b^2} - \frac{b}{2}\right)}.$$

BURLINGTON, N. J.

P. H. B

Solved also by W. W.

#### SOLUTION OF QUESTION 18.

[Suppose 8 sheep in 7 weeks to eat all the grass on 400 square rods of land, also all that grows in the same time; and suppose 9 sheep in 8 weeks to eat all the grass on 500 square rods of land, also all that grows in the same time. How many sheep will be required to eat all the grass on 600 square rods of land in 12 weeks, also all that grows in the same time; there being the same quantity of grass on each square rod, and the growth being constant and uniform?]

*Solution.* — If 400 rods of standing grass, plus 7 weeks' growth thereon, require 8 sheep for 7 weeks, it is plain that 500 rods of standing grass, plus 7 weeks' growth thereon, will require  $\frac{500}{400}$  of  $\frac{7}{8}$  of 8 sheep =  $8\frac{3}{4}$  sheep for 8 weeks; and consequently 1 week's growth on 500 rods will require  $9 - 8\frac{3}{4} = \frac{1}{4}$  sheep for 8 weeks, and 8 weeks' growth on 500 rods will require  $\frac{1}{4} \times 8 = 2$  sheep for 8 weeks; that is, 2 sheep will be required to eat the growth of 500 rods as fast as it arises.

Hence  $9 - 2 = 7$  the number of sheep that is required to eat the standing grass of 500 rods in 8 weeks. To eat the standing grass of 600 rods in 12 weeks will require  $\frac{600}{500}$  of  $\frac{8}{12}$  of 7 sheep = 5.6 sheep, and to eat the growth thereon as fast as it arises will require  $\frac{600}{500}$  of 2 sheep = 2.4 sheep.

Hence to eat the standing grass plus the growth thereon for 12 weeks in 12 weeks' time, will require  $5.6 + 2.4 = 8$  sheep.

W. W.,

BURLINGTON, N. J.

A Pupil of Boys' Grammar School.



## SOLUTION SECOND.

Let  $x$  represent the original quantity of grass on one square rod of ground and  $y$  the quantity which grows in *one week* on the same. Then the grass on 400 square rods, with what grows on the same in 7 weeks, is equal to  $400x + 7 \times 400y$ , which is what 8 sheep eat in 7 weeks; then 1 sheep in 1 week will eat  $\frac{400x + 2800y}{8 \times 7}$ . And since 9 sheep in 8 weeks eat 500 square rods, with

the growth thereon in the same time, 1 sheep in 1 week will eat  $\frac{500x + 4000y}{8 \times 9}$

$$\text{Hence } \frac{400x + 2800y}{8 \times 7} = \frac{500x + 4000y}{8 \times 9}.$$

From which we have  $3600x + 25200y = 3500x + 28000y$ . And  $x = 28y$ , *e. i.* the quantity which grows on 1 rod in 1 week is equal to  $\frac{1}{28}$  of the original quantity on the same. Then  $400x + 2800y$  which 8 sheep eat in 7 weeks, is

$$= 400x + 2800 \times \frac{x}{28} = 500x;$$

$$\text{and } 500x + 4000y \text{ is equal } 500x + 4000 \frac{x}{28} = \frac{4500x}{7};$$

$$\text{also } 600x + 7200y = 600x + 7200 \frac{x}{28} = \frac{6000x}{7}.$$

The question is now resolved to this, viz., if 9 sheep in 8 weeks eat  $\frac{4500x}{7}$ , how many are required to eat  $\frac{6000x}{7}$  in 12 weeks?

$$\left. \begin{array}{l} \frac{4500x}{7} : \frac{6000x}{7} \\ 12 : 8 \end{array} \right\} :: 9 : 8 \text{ sheep. } \text{Ans.}$$

G. S. H.

Solved also, both algebraically and arithmetically, by pupils of the Classical and Mathematical Institute in Hackensack.

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## Intelligence.

THE HAMPDEN COUNTY TEACHERS' ASSOCIATION held its eleventh annual meeting at Chicopee on Friday and Saturday, Oct. 22 and 23d.

Friday afternoon, 2½ o'clock, the meeting was called to order by the President. Prayer offered by Rev. Mr. Stevenson. An interesting and instructive lecture was then delivered by Rev. J. S. Bingham, of Westfield. The lecturer forcibly urged upon teachers the importance of knowing *when* and *how much* to assist the scholar in his studies. After the lecture, remarks were made upon the following question: "What are the *essentials* of a good school."

Friday evening, a lecture was delivered by Homer B. Sprague, of Worcester, upon "Purpose and Enthusiasm, or the Man of One Idea." It was an interesting lecture, well delivered, and listened to with great interest.

Saturday morning, extracts from the "Hampden County Teacher" were read by its editor, J. W. Dickinson. Remarks were made upon the following subject: On teaching the Natural Sciences, or "Object Teaching" in the Primary Schools.

The meeting was fully attended, and was considered one of the best the Association has ever held.

The following list of officers was chosen for the ensuing year : —

E. F. Foster, Springfield, *President*; James Tufts, Monson, and A. B. Clapp, Westfield, *Vice Presidents*; J. D. Stratton, Springfield, *Secretary*; A. Parish, Springfield, *Treasurer*; H. E. Daniels, Westfield, W. C. Goldthwaite, Longmeadow, J. K. Lombard, Springfield, E. P. Nettleton, Chicopee Falls, J. C. Greenough, Westfield, and S. Holman, Holyoke, *Counsellors*.

The next meeting of the Association will be held in May.

J. D. STRATTON, *Secretary*.

**ESSEX COUNTY TEACHERS' CONVENTION.** — The 57th meeting of the Essex County Teachers' Association took place during the 15th and 16th of October, at Ipswich. The exercises commenced in the Town Hall, the President, J. S. Eaton, Esq., of Andover, in the chair.

At 10 o'clock the Convention were invited to listen to a lecture by William J. Rolfe, Esq., of Lawrence.

It was a highly poetical and scholarly production. His subject was the Teacher and the Poet. He portrayed the ideal poet with a skilful hand. He endeavored to make us believe there is poetry in teaching.

The teacher should have the keen vision of the poet, to whose eye everything is immortal, — no such thing as *death*, but only *change*. Like the poet he should always preserve the *childhood of feeling*. He should never look upon the heart of childhood as a withered, shrivelled thing, but have that freshness of spirit which will sympathize and love and work, undepressed by care, strengthened by trials.

The poetic *utterance* distinguishes the true poet more than the poetic *feeling*. Our hearts are full of latent sensibility to which the poet gives expression. He sees and sings the beauties of nature. The teacher must have the poet's *utterance*. He must impart *vividness* and *reality* to what he teaches; and if he has the poet's heart he will *move* his pupils.

The poet, argued the lecturer, is the truly *practical* man. He is as ready to *act* his poetry as to *sing* it, and the *acting* of poetry makes heroism. Many a great enterprise has owed its success to the efforts of a poetic man, who at first was regarded as a visionary dreamer. With keener vision and more faith than other men, indifferent to popularity, he presses on, always true to his ideal. The teacher, like the poet, must toil on patiently, even painfully, to work out *his* ideal. And may he produce a poem worthy to be sung by seraphic lips in the kingdom of God!

At 2½ P. M., the meeting listened to a discussion of the following question: "Ought Female Teachers to be paid the same Salary for the same service as Male Teachers?"

Prof. Crosby, of Salem, opened the discussion with some interesting remarks. Compensation is given to the teacher for certain service, not for sex, condition, &c. The married man ought to have the same pay as the unmarried — the lady as the gentleman. The lady ought to have the same right of living expensively, or of supporting a husband or family, as a man. The large supply of female teachers, much in advance of the demand, keeps down the market price.

Jacob Batchelder, Esq., of Salem, said ladies are beginning to call aloud for their rights. They are beginning to fill responsible scientific situations. Maria Mitchell, of Nantucket, sits at the lower end of a telescope and takes charge of the heavens. If the ladies will ask for what they want, they will have it. When ladies plead in the courtroom, or preach in the pulpit, they will be paid.

Mr. Hill, of Danvers, spoke in the negative. He said teachers were *not* paid according to service rendered. A teacher in Boston gets \$1000, and another in the country gets \$600 for equal service. Necessary expenses are taken into consideration, and the gentlemen have necessarily more expenses than the ladies.

The question was decided in the affirmative by a large majority.

The morning lecture was then discussed.

Prof. Crosby spoke in high terms of the lecture. He wished to have children study the poetry of nature. They can study astronomy by looking up to the stars, — holes in the sky to let the glory through, as a little boy defined them.

Mr. Batchelder said the teacher had but little time for poetry. When a child is tired of study, he would have teachers divert his mind by some entertaining description, and gradually lead his mind back to his study by another path, — thus varying their methods of instruction, and keeping up the charm of novelty.

Hon. David Choate, of Essex, was called upon to make some remarks. He helped rock the cradle of the Association, and now it has become a giant. He had taught school twenty-five years, and had much fondness for the employment. The young mind should be treated with much care and kindness. It is poor business to take a bud and pick it open. Let it have the genial sunshine and showers, and it will come to maturity. Do n't be cross in school, — no flower will bloom in a northeast storm. The teacher should popularize education, and improve every opportunity to impart items of knowledge.

Prof. Crosby was chosen a delegate to represent the Association in the Middlesex Convention.

Friday evening the Convention met at Rev. Mr. Fitz's church.

Rev. J. W. Murray, of South Danvers, delivered an able and brilliant lecture upon the influence of the reading of prose fiction upon the mind.

After the lecture, the Convention, by the polite invitation of Prof. Cowles and wife repaired to the rooms of their Seminary, where they had a very agreeable social re-union and festive entertainment.

Saturday morning the following officers were elected for the ensuing year: —

President — W. C. Todd, of Newburyport; Vice-President — J. A. Shores, of Haverhill; Recording Secretary — D. A. Easton, of Gloucester; Corresponding Secretary — Alpheus Crosby, of Salem; Treasurer — Stephen Peabody, of Newburyport; Counselors — W. J. Rolfe, of Lawrence, A. J. Saunders of Groveland, L. J. Brickett, of South Danvers, E. E. Boyton, of Lynn, John R. Baker, of Beverly, W. R. Bell, of Ipswich.

At 9 o'clock, lecture by Hon. J. D. Philbrick, of Boston, Wm. C. Todd, Esq., in the chair.

The lecturer enforced the duty of moral education in our schools in a forcible and philosophical manner. For twenty-five years we have been pushing the intellect at the expense of the mind and morals. We want something higher than intellect; we want virtue added to knowledge. Moral training should be the controlling idea in all systems of education. "For God's sake," said the impious Voltaire, "never let the rising generation learn anything about God." Such teachings led to bloody anarchy in France. There is little difference of opinion in the community upon the necessity of moral education, but in practice there is great need of reform.

The moral character of the teacher must be right. The power of example is the soul of instruction. A boy in the Rugby school exclaimed, "It is a shame to deceive the master, for he always believes us." Have faith in your pupils, and make them worthy of your confidence. Labor to train your pupils to virtuous habits. Socrates devoted his life to the moral regeneration of his country. Let example stimulate your devotion, Remember that high moral development is the paramount object of education.

An interesting discussion followed, in which Rev. Mr. Fitz, Rev. Mr. Southgate, Prof. Cowles and Dr. Bower, of Ipswich, Hon. J. D. Philbrick, Hon. David Choate, Mr. Easton, of Gloucester, Messrs. Morss and Boynton, of Lynn, participated.

This was one of the most successful and interesting of the meetings of the Association. There was a large attendance, especially of ladies. An earnest feeling pervaded the meeting, and we have reason to believe the teachers of Essex County went home from that Convention better prepared than ever before to be faithful, correct, and earnest in the great work of developing and training the children and youth committed to their care.

## Reviewers' Table.

**OHIO SCHOOL COMMISSIONER'S REPORT.** The Annual Report for 1857 of the State Commissioner, Hon. A. Symth, is a very elaborate and valuable paper. It contains an amount of matter which indicates great labor, and a thorough acquaintance with the working of the school system of that State. Some of the communications from the "County School Examiners" furnish rich specimens among the candidates for teaching.

The following is an extract from a letter written by a candidate asking for a recommendation.

"School Examinors of ——— county Ohio.

With Pleasure

can say that I am well I Have ingaged a School a bout amile from ——— and think of commencing Next Monday I wish you to send me a sertificate if you Can Possible But I Dont Expect one for a great Length of time as I think I Stood a very Poor Examination on account of being out of Practice but think you will give me one For fore or Six months as it will Save me of Some Trouble to come again I Received one Surtificate in this State a bout three years ago and Tout one quarter, Since that time Have Bin Teaching in Iowa until last Fall, Then went Then went to Shool at ——— Ohio one Quarter, and a Reader of Ohio Journal with t is Little Experience Would feel very Sorey if Should fail withith Success Pleas Rite as Soon as you git this, to ———, o

Yours, Very Respectfully ———"

The following indicates the proficiency of another candidate in English Grammar. He was required to parse the passage, —

"Be wise to-day, 'tis madness to defer;  
Next day the fatal precedent will plead."

His rendering was on this wise, —

"Be — verb, ind., third, sing., agrees with noun to-day."

"Wise — adj., belongs to to-day."

"To-day — noun, obj., gov. by 'be wise together.'"

"Tis — introductory expletive."

"Madness — noun, obj., gov. by 'is,'"

"Day — noun, obj., gov. by 'next.'"

"The — adj., belongs to 'precedent.'"

"Precedent — noun, obj., gov. by 'the.'"

"Will plead — verb having 'precedent' for noun."

During an examination in geography the candidate was desired to go to an outline map of the United States, and point out the New England States. He took his position and proceeded thus: —

"Well, we will begin with New York;" at the same time pointing to Virginia.

Another was asked, "What is the Earth?" He replied, "Well it is a kind of a combination of *mud* and *water*."

The following is an exact copy of a certificate of moral character, which was filed by an applicant: —

"i hearby carefey that C. R. is a good Moral carractor Wus carractor wur i quended with 'A. B.' Destriect Clark."

At one examination, the written question required the applicant to name the several States intersected by the parallel of 36° 30' North Latitude. The candidate promptly replied that there was no such line existing, as it was repealed by the Kansas-Nebraska Bill. Being reminded of his error, he scornfully referred the examiners to the New York Tribune, and left, evidently impressed with deep commiseration for their ignorance.

Another defines thus (an elementary sound): "It is a sound utered by the teath palat gums lips if I mystake not the question." "A passive verb represents the action as passing from the object to the actor, and is formed by the object being in the nom. case."

"Vocal consistes of pure tone. Aspret of pure breath."

"Word is sine of our ides."

"Equator is a immaginary line drowing around the earth from east to west."

"Classification is a cistimatic arraingement according to some definet plan."

"Leter is a character used as an elimentary sound."

These are not to be taken as representatives of the Ohio teaching corps. We know they are, as a body, among the most enterprising, thorough teachers, east or west.